

# Hydra Renewable Resources, Inc.



**Creating A New Profit Paradigm  
in Used Water Management**

# Why Are We Here?

**To Make Money**

- Revenue from
  - Energy
  - Water
- Triple bottom line – *social / environmental / economic*
  - Hydra
  - Newmarket

# What Do We Bring?

## New Water & Energy Center

- No Risk to the Community
- We Bring all of the Capital
- Insurance Based Performance Guarantee
  - Technology
  - Partners
- Indoor Facility
- Rail Service
- Professional Management



# What Are The Benefits?

**We Solve Problems**

- **Meet / Exceed EPA Expectations**
- **Eliminate Town Expenses**
  - **New WWTP - \$18 Million**
  - **Annual Operating - \$1.4 Million**

# What Are The Benefits?

**Create  
NH  
based  
PPE**

- **25% equity to Newmarket**
  - \$ 5 million / year dividend
  - \$ 100 Million over 20 years
  - Board Participation in Management
- **\$ 10 Million Maintenance for Collection System**
- **Create New Jobs**



# What Are The Benefits?

**Bigger  
Tax Base**

- **Wilson Property Back on the Tax Roll**



# What Are The Benefits?

## Fixed Costs

- **Lock in Current Sewer Rates for the Next 20 Years**



# What Are The Benefits?

## An Annual Dividend

- **Equal to Budget Revenue Raised by Property Tax**
- **Sufficient to Carry Capital Cost of \$35 Million School *with money left over***



*The Choice is  
Yours*



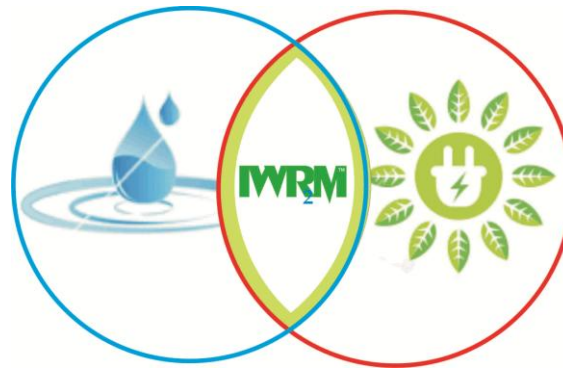
***We Are...***

# Integrated Waste Resource & Recovery Management –



Positioned at the Nexus of

**Water  
&  
Energy**

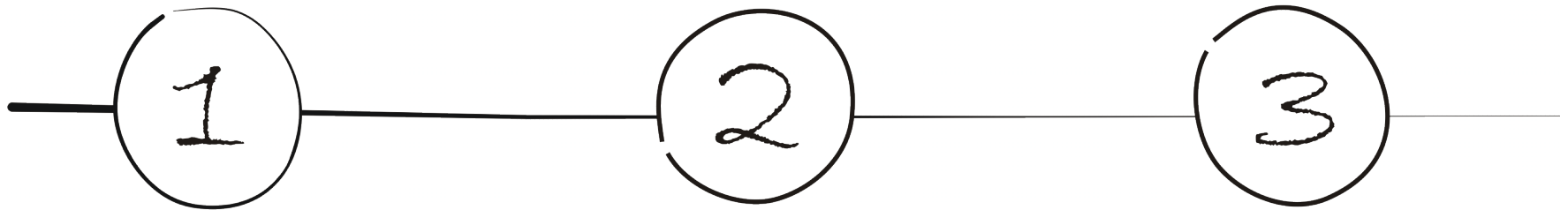


*with*

## **Used Water Processing as the *Linchpin***

***We Are...***

## A Unique Three Part Processing Sequence

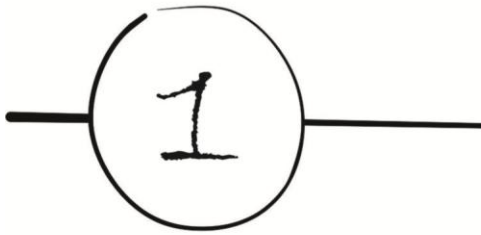


that Changes Forever the Paradigm of  
Wastewater Management



# ***The Energy Utility***

W2e



Sludge & RDF  
to  
Energy

# ***The Water Utility***

Clean  
Water

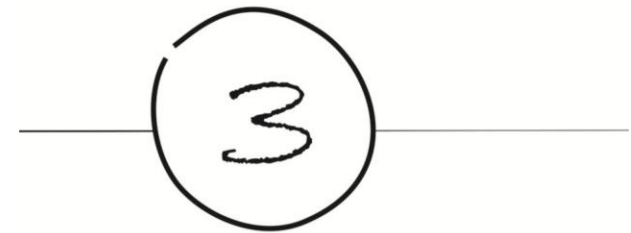


CBUM  
Filtration



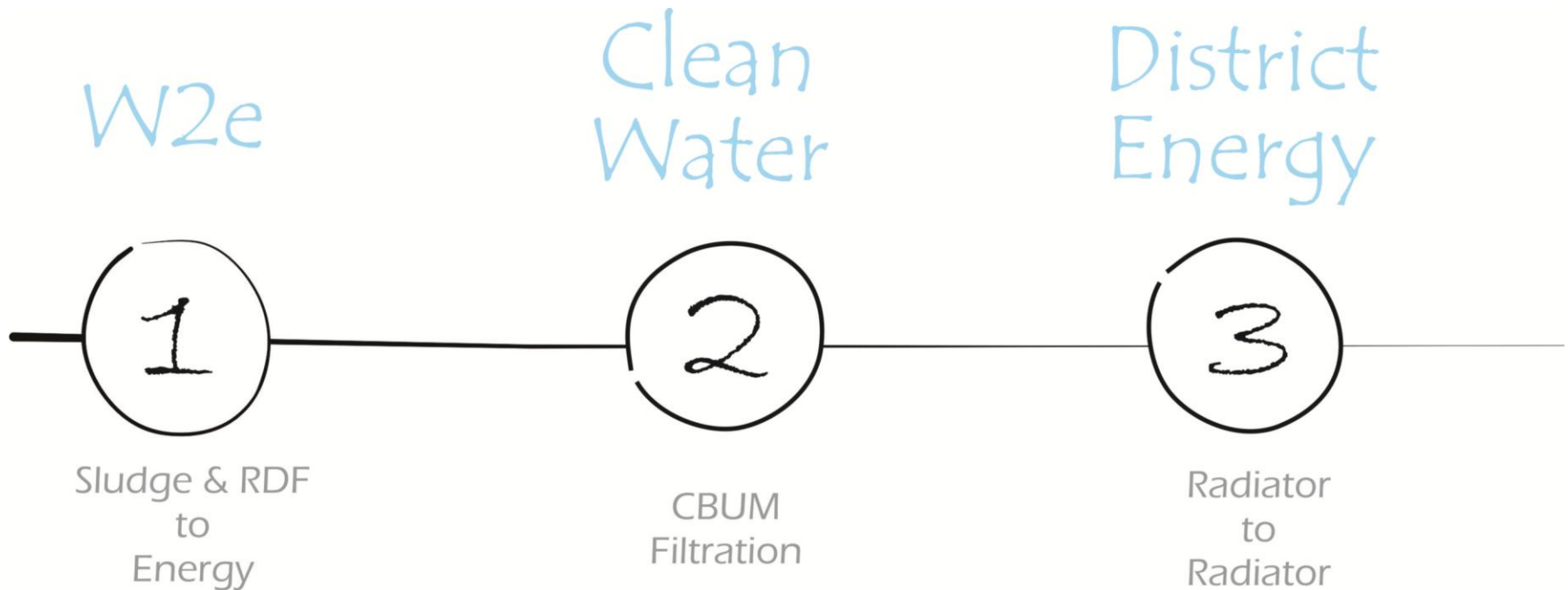
# ***The District Heat Utility***

District  
Energy



Radiator  
to  
Radiator

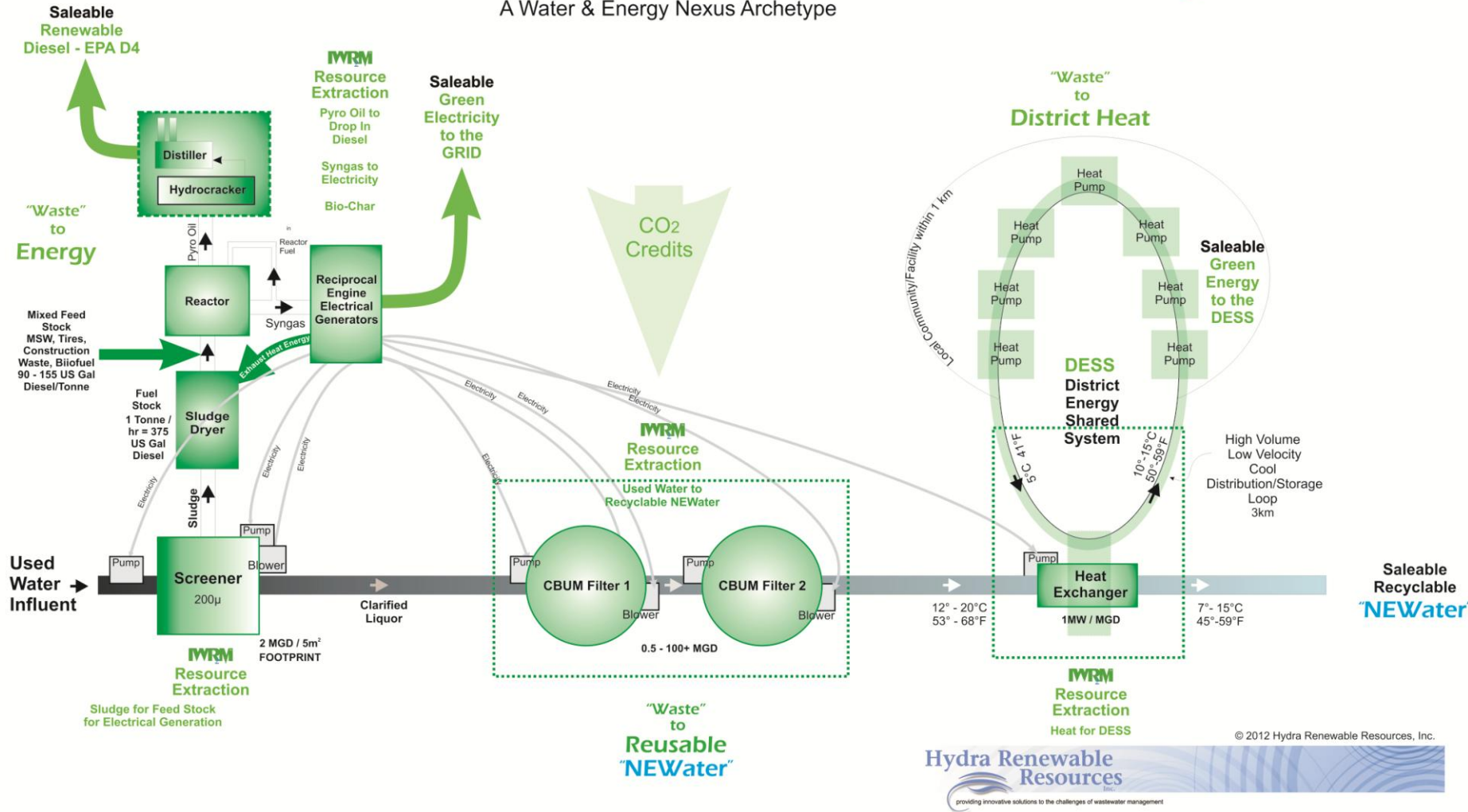
# Integrated Waste Resource & Recovery Management





# Hydra's Integrated Wastewater Resource & Recovery Management **IWRM**

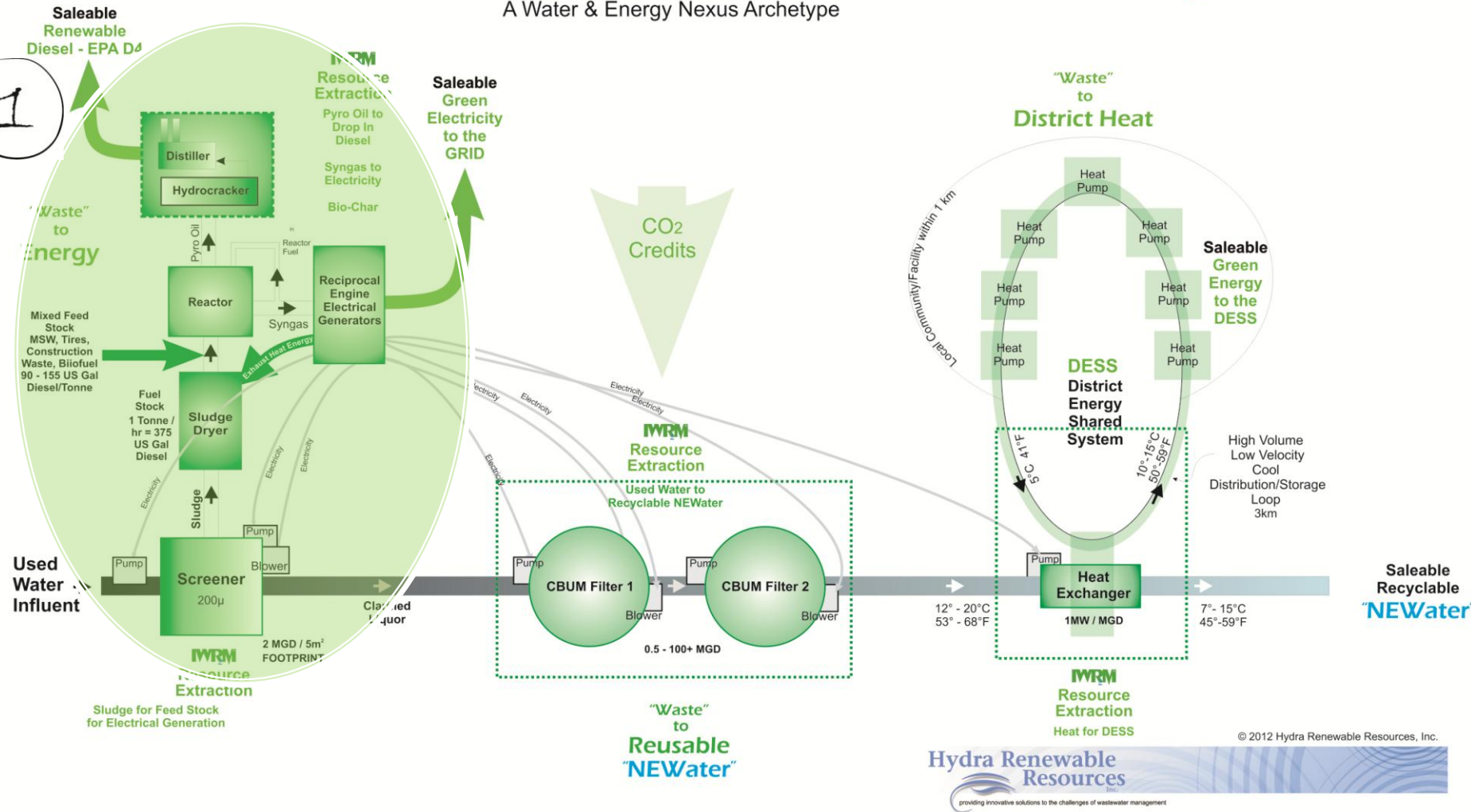
A Water & Energy Nexus Archetype



# Our Formal View

# Hydra's water Resource & Reco

A Water & Energy Nexus Archetype



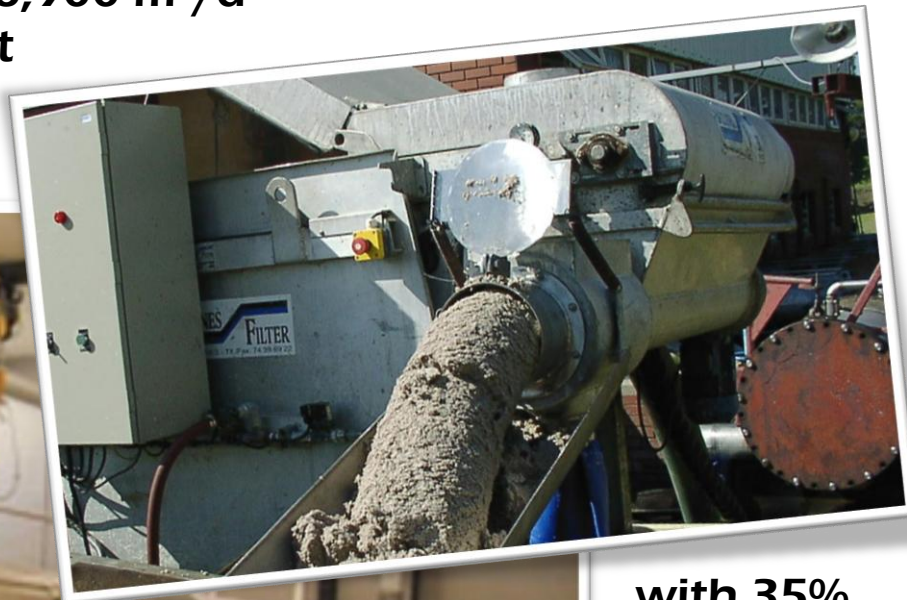


# ***Preliminary Screeners***

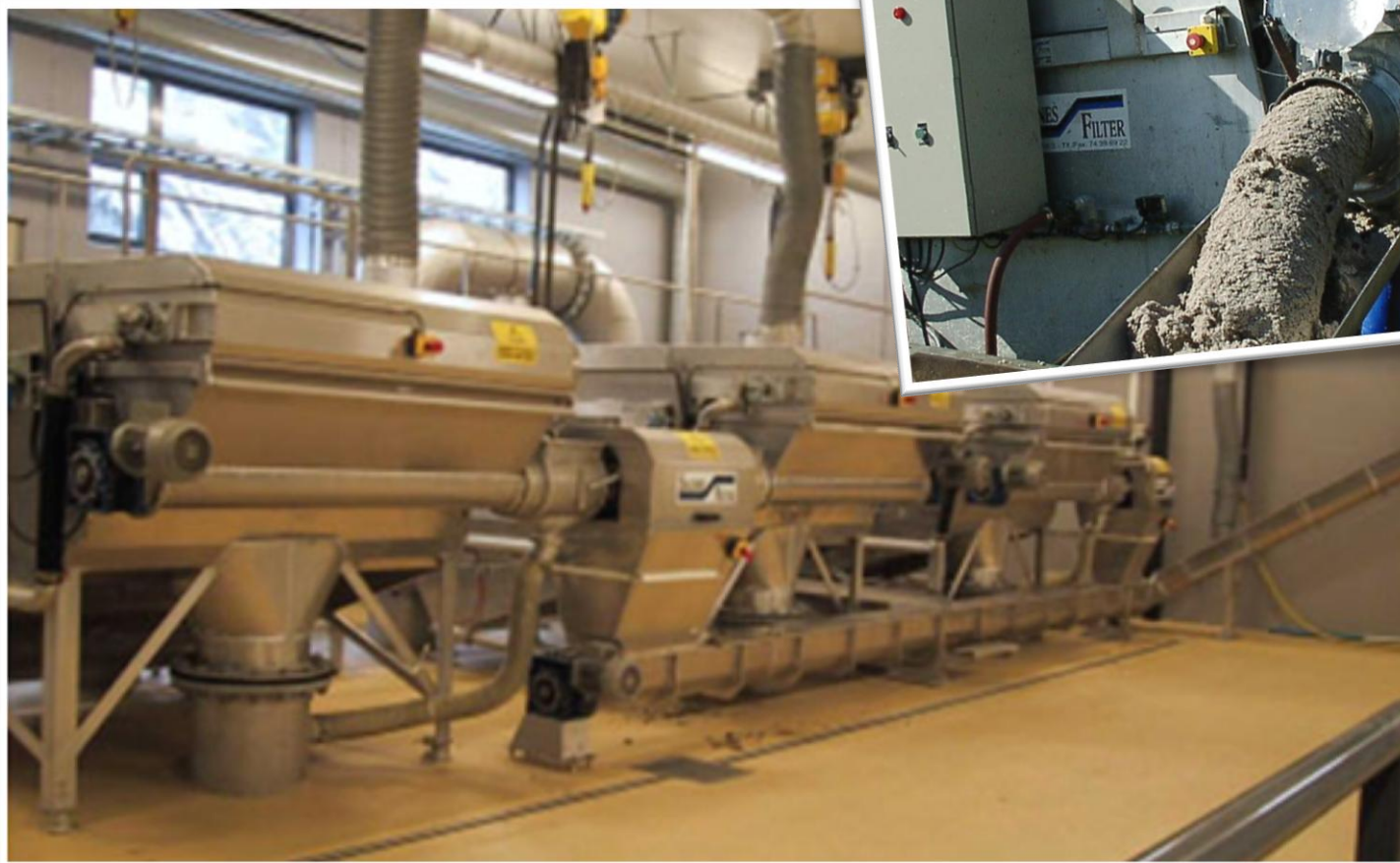
**Salsnes Filters**

**3 @ 1.8 MGD / 6,900 m<sup>3</sup>/d**

**7' x 5' footprint**



**with 35%  
dry solids**







# ***Sludge Dryer***

**VOMM 1700<sub>mm</sub> Sludge Dryers**

**2 @ 2.5 tons / hour water  
dissipation**



**90%  
Dry  
Fuel**



# ***ATR<sup>2</sup> Reactor & Distiller***

**Bio-Green Reactor & Distillation Column**  
**300 ton/day**



**with CHAR  
by-product**

# ***Electrical Generators***

## **360kw I-Power Generators**



**Six Generator  
2.16 MW  
Configuration**



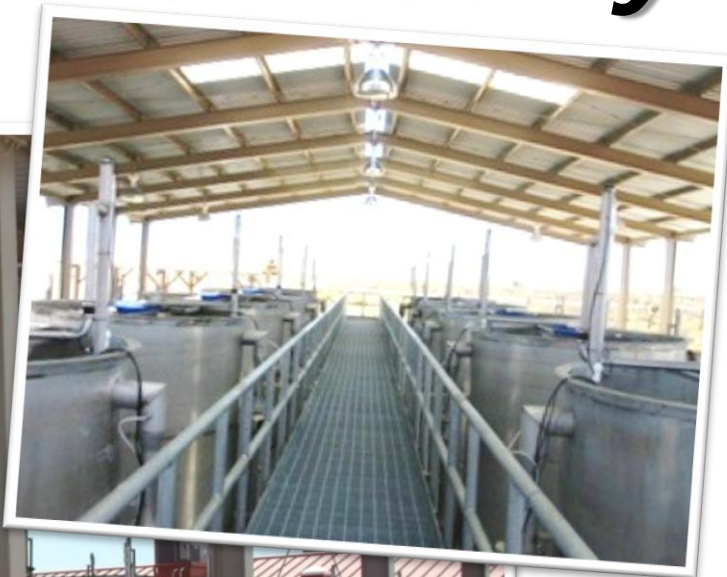
②





## ***2.1 MGD CBUM Facility***

12 Trains in 6x6





**Pre-Manufactured**

**Assembled on Site**



**and Modular**





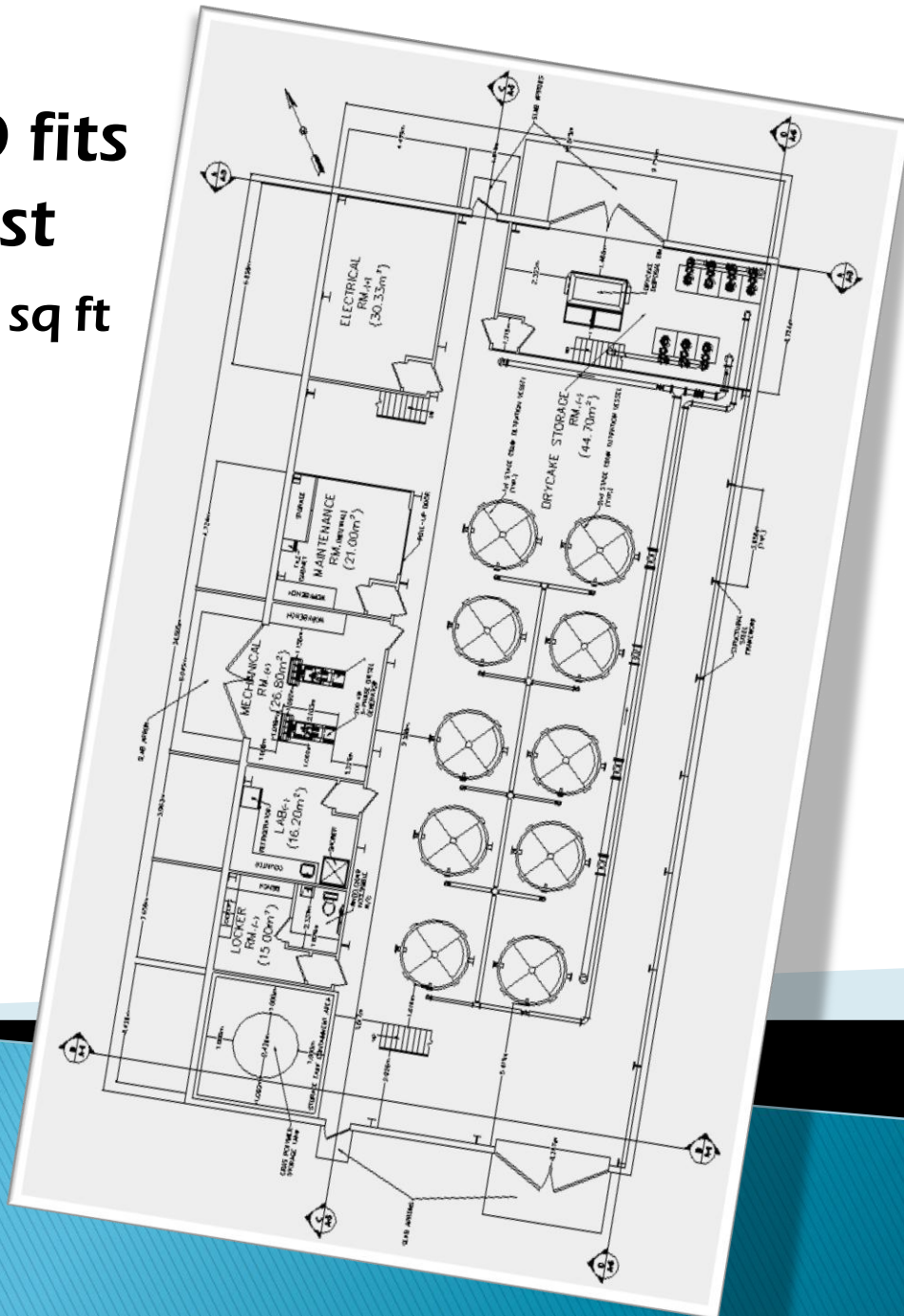
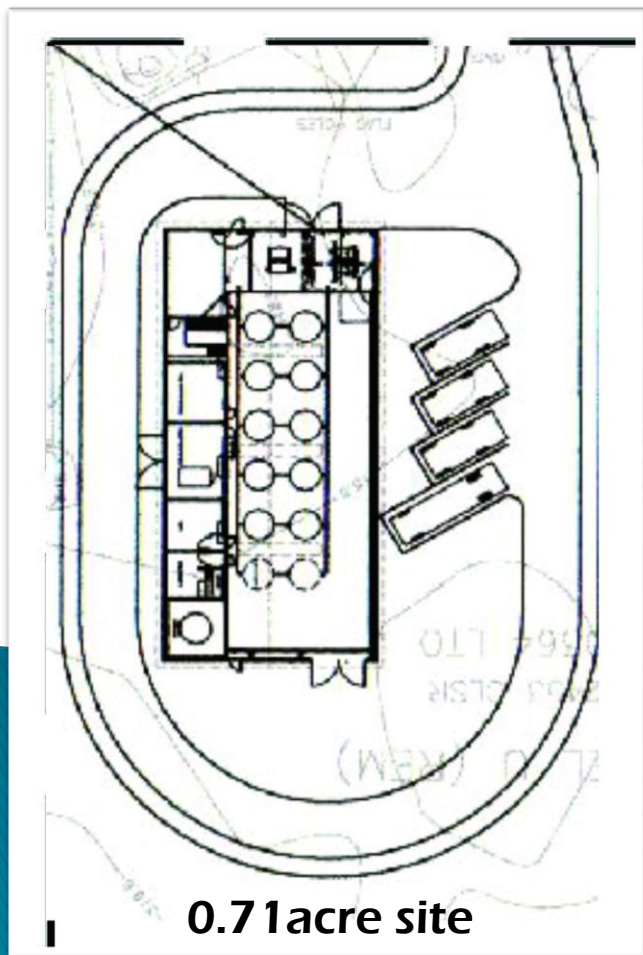
## High treatment standards

Exceeds SBR, MBR, Activated Sludge...

BOD <sub>5</sub>	≤ 5 mg/l
TSS	≤ 5 mg/l
Total Nitrogen	≤ 2.0 mg/l
Ammonia	≤ 1.0 mg/l
Phosphorous	≤ 0.1 mg/l or less
Fecal Coliform	≤ 2.2 MPN/100 ml

Effluent exceeds *EVERY* international standard for reclamation

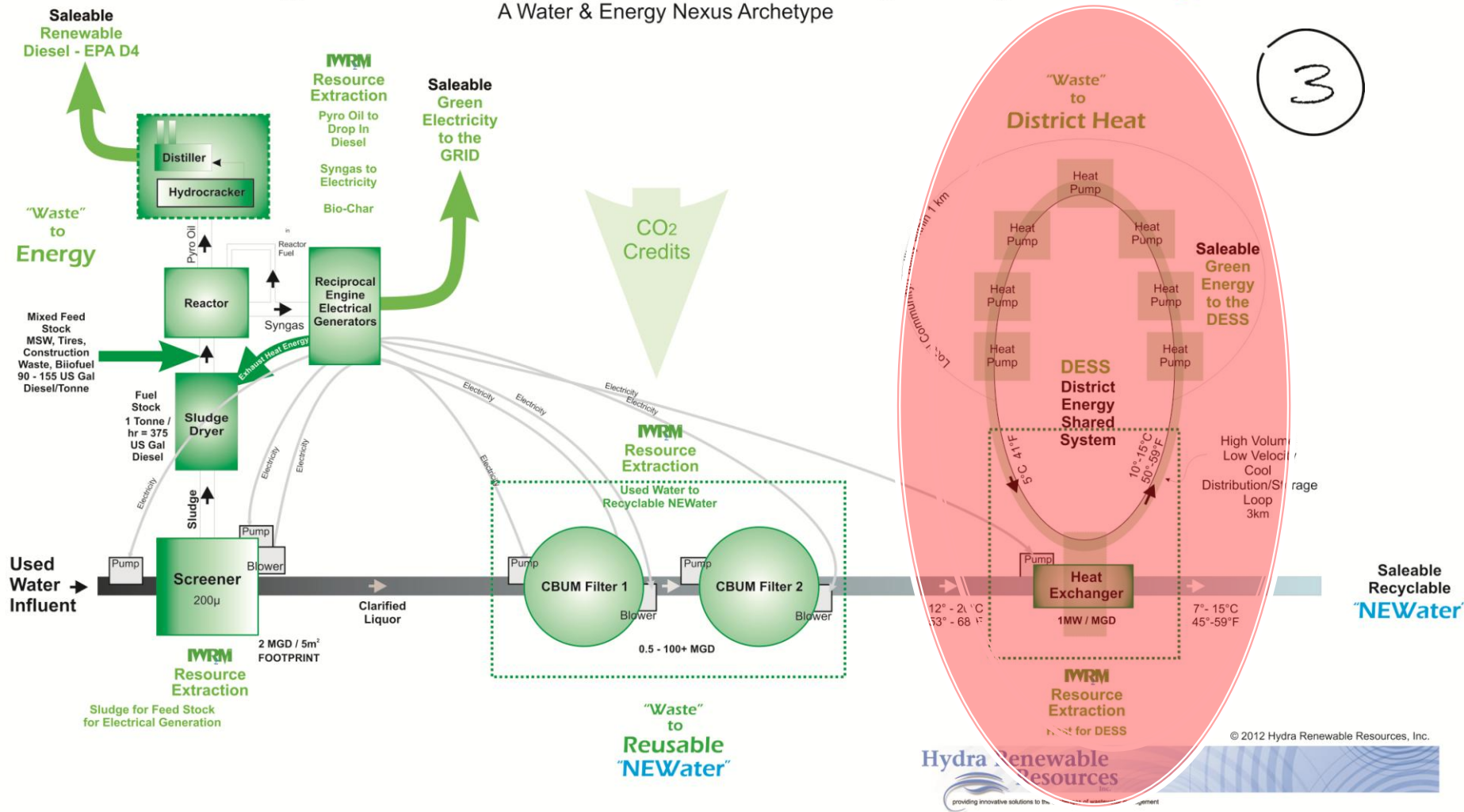
**1 MGD fits  
in just  
6,500 sq ft**





**... and it can look good too!**





## 3 - The District Heating Utility

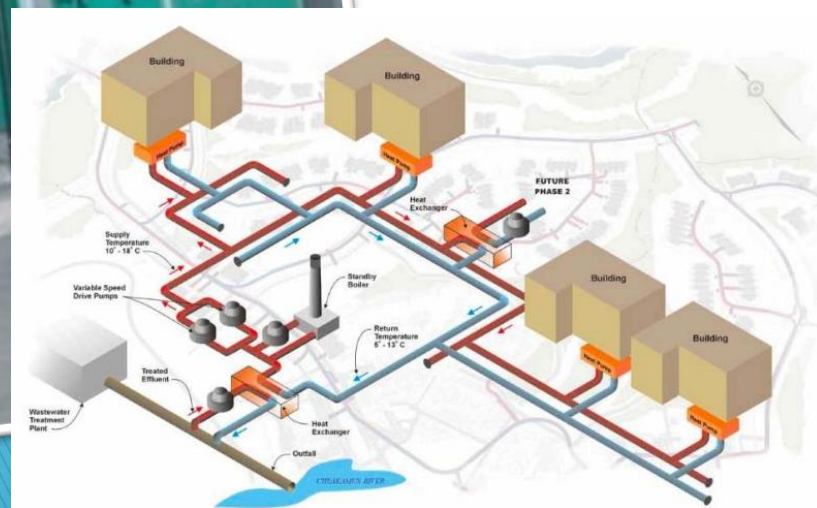


# DESS Heat Exchange

Radiator to Radiator Heat Exchange of  
Latent Energy in Processed Water



*Schematic of DESS  
as implemented in  
Whistler BC - 2009  
85,000 m<sup>2</sup> – 2,200 Residents*





## Hydra's water Resource & Reco

A Water & Energy Nexus Archetype



❖ **Design, Finance, Build, Operate & Transfer on 20 years**

**Project Financing**

**Project Management**

**Construction Management**

**Engineering & Environmental Design**

**Site infrastructure Construction**

**Systems Acquisition & Integration**

**Commissioning *and Complete***

**Facilities Operation & Lifecycle Management**

## *Operating Principles*

- ❖ **Focus on “Process Integration”  
rather than “Technology R&D”**
- ❖ **Leverage capabilities and  
knowledge of  
our US Based Suppliers  
our World Class Partners**



## *Our Suppliers*

salsnes  
Filter™

SIEMENS



BLUE WATER  
TECHNOLOGIES

IPower  
Energy Systems, LLC



A3-USA

Water and Wastewater Membranes

CCC GROUP, INC.

Hydra Renewable  
Resources  
Inc.  
providing innovative solutions to the challenges of wastewater management



## ***Our Partners***

**Project Management  
Construction Management  
Engineering Design  
Architectural Design  
Builders &  
Facility Operations**



## *Our Partners*





# Capital Investment

Site Acquisition & Trunk Relocation	\$	4,500,000	4.2%
Wastewater Treatment Equipment (8 Trains w/ 1 in Redundant Mode)	\$	5,194,615	4.8%
Pumps and Ancillary Treatment Equipment	\$	1,711,938	1.6%
Drying/Pyrolyzitation/Electrification Equipment ( 300 ton/day ATR <sup>2</sup> w/2.0 MW capacity)	\$	67,163,979	62.4%
Professional Services	\$	13,450,000	12.5%
Treatment Center Buildings with Labs & Wet Wells (32 600 sq ft / 3 030m <sup>2</sup> )	\$	8,767,364	8.1%
Insurance & Bonding	\$	5,993,120	5.6%
Software Licence (\$ 10,000 / Train)	\$	80,000	0.1%
Misc (travel etc.)	\$	<u>800,000</u>	0.7%

**Total** \$ 107,661,016





# Revenue

Recycled Water Sales <i>@ \$ 3.19 ccf - \$ 4.26 / 1,000 Gal @ 98% Recovery 1 MGD salable</i>	\$ 1,619,396	3.2%
Green Electrical Sales <i>no external sales assumed</i>	\$ -	0.0%
Renewable Diesel Sales <i>\$3.00 / Gal Rack Rate assumed PLUS \$1.00 RIN</i>	\$ 45,538,860	91.3%
Bio-char Sales <i>\$50 / ton</i>	\$ 1,519,313	3.0%
Liquid Waste Tipping Fees (Sewage Service Fee) <i>@ \$6.70 ccf \$ 8.98 / 1000 US Gal</i>	\$ 859,770	1.7%
Solid Waste Tipping Fees <i>no fees assumed</i>	\$ -	0.0%
DESS Energy <i>@ \$ 0.039/kW (1 MW / MGD)</i>	<u>\$ 315,398</u>	0.6%

**\$ 49,852,737**



# Expenses

Capital Investment Carrying Cost ( <i>\$116.3 MM @ 12% over 20 Yrs - DFBOT Model</i> )	\$ 15,363,309	72.1%
Management Fees per year ( <i>HYDRA FM \$25/hr custodial with benefits</i> )	\$ 2,636,785	12.4%
Newmarket Sewerage & WWTP Maintenance and Testing ( <i>Maint &amp; Upgrade @ \$0.5 MM pa \$10 MM / 20 years</i> )	\$ 1,727,835	8.1%
Software Maintenance Fee ( <i>US\$ 2,000 / Train</i> )	\$ 16,000	0.1%
W2e Catalyst ( <i>Zeolite</i> )	\$ 1,511,663	7.1%
Chemicals	<u>\$ 46,566</u>	0.2%
	<u>\$ 21,302,157</u>	Pay Back
Projected EBITDA per Annum	<u>\$ 28,550,580</u>	2.45



## In Summary

### Mature Facility

Revenue	(000's)	\$ 49,853
Expenses	(000's)	\$ 21,302

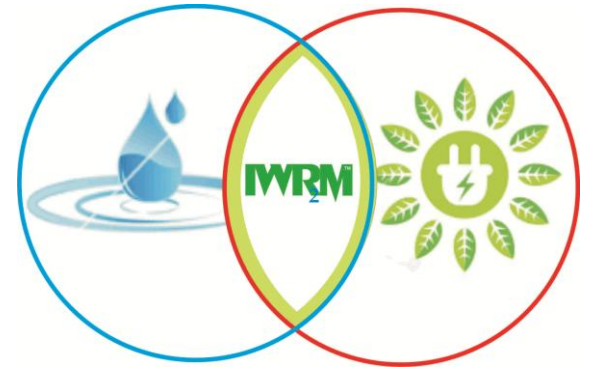
Projected EBITDA (2012 000's dollars)	<b>\$28,551</b>
---------------------------------------	-----------------

<b>Newmarket Annual Dividend</b>	<b>\$ 7,137</b>
----------------------------------	-----------------



## In Closing

1. **We Are Here to Make Money**
2. **We Will Create a New Water & Energy Center**
3. **We Will Address Some Newmarket Challenges**
4. **We Will Create A New Hampshire Based PPE**
5. **We Will Create a Bigger Tax Base**
6. **We Will Fix Sewer Rates for 20 Years**
7. **We Will Provide Annual Dividends to Newmarket**



# Questions?